a K_d value of at least 1×10^{-6} M as measured by SPR; g) capable of exhibiting at least 30% competition at 1 μM, with 2 μM angiotensin converting enzyme 2 (ACE2) receptor, for binding to the RBD of spike protein of SARS-CoV-2 immobilized at a resonance units (RU) of 250, as measured by SPR; h) capable of binding to the RBD of spike protein of SARS-CoV-2 at an neutralizing activity at an IC_{50} value of no more than 100 μg/ml (for example, no more than 50 μg/ml, no more than 40 μg/ml, no more than 30 μg/ml, no more than 25 μg/ml, no more than 20 μg/ml, no more than 15 μg/ml, no more than 10 μg/ml, no more than 8 μg/ml, no more than 6 μg/ml, no more than 4 μg/ml, no more than 2 μg/ml, or no more than 1 μg/ml), as measured by pseudovirus neutralization assay, and i) capable of binding to the RBD of spike protein of SARS-CoV-2 at an neutralizing activity at an IC_{50} value of no more than 1 μg/ml (for example, no more than 50 ng/ml, no more than 40 ng/ml, no more than 30 ng/ml, no more than 25 ng/ml, no more than 20 ng/ml, no more than 15 ng/ml, no more than 10 ng/ml, no more than 8 ng/ml, no more than 6 ng/ml, no more than 4 ng/ml, no more than 2 ng/ml, or no more than 1 ng/ml), as measured by live virus neutralization assay using focus reduction neutralization test (FRNT) method.

[0013] In yet another aspect, the present disclosure provides an isolated or recombinant antibody or an antigen-binding fragment thereof capable of specifically binding to RBD of spike protein of SARS-CoV-2.

[0014] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 1, SEQ ID NO: 2, and SEQ ID NO: 3.

[0015] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 11, SEQ ID NO: 12, and SEQ ID NO: 13.

[0016] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 21, SEQ ID NO: 22, and SEQ ID NO: 23.

[0017] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 31, SEQ ID NO: 32, and SEQ ID NO: 33.

[0018] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 41, SEQ ID NO: 42, and SEQ ID NO: 43.

[0019] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 51, SEQ ID NO: 52, and SEQ ID NO: 53.

[0020] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 65, SEQ ID NO: 66, and SEQ ID NO: 67.

[0021] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 75, SEQ ID NO: 76, and SEQ ID NO: 77.

[0022] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 85, SEQ ID NO: 86, and SEQ ID NO: 87.

[0023] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 95, SEQ ID NO: 96, and SEQ ID NO: 97.

[0024] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 105, SEQ ID NO: 106, and SEQ ID NO: 107.

[0025] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 136, SEQ ID NO: 137, and SEQ ID NO: 138.

[0026] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 146, SEQ ID NO: 147, and SEQ ID NO: 148.

[0027] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 156, SEQ ID NO: 157, and SEQ ID NO: 158.

[0028] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 166, SEQ ID NO: 167, and SEQ ID NO: 168.

[0029] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 176, SEQ ID NO: 177, and SEQ ID NO: 178.

[0030] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 186, SEQ ID NO: 187, and SEQ ID NO: 188.

[0031] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 196, SEQ ID NO: 197, and SEQ ID NO: 198.

[0032] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 206, SEQ ID NO: 207, and SEQ ID NO: 208.

[0033] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 216, SEQ ID NO: 217, and SEQ ID NO: 218.

[0034] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 226, SEQ ID NO: 227, and SEQ ID NO: 228.

[0035] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 236, SEQ ID NO: 237, and SEQ ID NO: 238.

[0036] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 246, SEQ ID NO: 247, and SEQ ID NO: 248.

[0037] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 256, SEQ ID NO: 257, and SEQ ID NO: 258.

[0038] In some embodiments, the antibody or antigen binding fragment of the present disclosure comprises 1, 2, or 3 heavy chain CDR sequences selected from SEQ ID NO: 266, SEQ ID NO: 267, and SEQ ID NO: 268.